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May 1993

Proposed Plan

Montana Pole Superfund Site

By the Montana Department of Health and Environmental Sciences
and the U.S. Environmental Protection Agency

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Agencies propose remedy for the site

The Montana Department of Health and Environmental Sciences (MDHES), with concurrence from the U.S. Environmental Protection Agency (EPA), has developed a plan for the cleanup of the Montana Pole Superfund site in Butte, Montana. The "preferred remedy" identified by the agencies is presented in this document, the Proposed Plan. The agencies' selection of a preferred remedy follows a remedial investigation and feasibility study (RI/FS) conducted by the Atlantic Richfield Company (ARCO) under an administrative order on consent agreed to by MDHES and ARCO. MDHES is the lead management agency under a cooperative agreement with EPA.

MDHES and EPA request public comment on this Proposed Plan, the preferred remedy, all of the other alternatives and the supporting documentation in the administrative record. The purpose of the proposed plan is to facilitate public participation in the remedy selection process. The preferred alternative identified in this document is only an initial recommendation. Changes to the preferred alternative, or changes from the preferred alternative to another alternative, may be made if public comment or additional information indicate such a change would result in a more appropriate remedy.

In this Proposed Plan, MDHES:

- Identifies the preferred remedy selected by MDHES and EPA and explains the reasons for that preference;
- Outlines the various alternatives that were evaluated and compared for the Montana Pole site;
- Highlights key information in the remedial investigation, feasibility study and administrative record;
- Seeks public review and comment on the agencies' selection, the other alternatives and the supporting RI/FS documents;
- Provides information on how the public can be involved in the remedy selection process; and
- Fulfills public notice requirements outlined in the Superfund law, known as the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), section 117(a), and the National Contingency Plan, 40 CFR Part 300, section 300.430(f).

The preferred remedy summarized

The major components of the preferred remedy are:

- Excavate approximately 208,000 cubic yards of contaminated soils from accessible areas of the site;
- Treat excavated soils (208,000 cubic yards) and previously removed soils (10,000 cubic yards stored in pole barns on site) by above-ground biological land treatment;
- Backfill treated soils into excavated areas;
- Flush inaccessible soils areas (principally underlying the Interstate 15-90) with water in order to recover hazardous substances;
- Contain contaminated groundwater and residual floating woodtreating oils using hydraulic and/or physical barriers;
- Treat extracted groundwater using the treatment plant installed at the site by EPA consisting of oil/water separation and granulated activated carbon;
- Discharge extracted, treated groundwater into Silver Bow Creek and/or recharge extracted, treated groundwater to the aquifer;
- Treat contaminated groundwater, inaccessible contaminated soils and contaminated soils not recovered by excavation by enhanced *in situ* (in-place) biological degradation;

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Summary, cont.

- Treat contaminated site debris and equipment by decontamination and dispose these materials in a licensed off-site landfill;
- Treat contaminated oils and sludges in a licensed off-site incinerator;
- Implement institutional controls as needed to prevent human access to contaminated media until remedial action is completed; and
- Monitor site media (groundwater, surface water, soils and air) to determine movement of contaminants and compliance with remedial action requirements.

Soils would be excavated from four general areas: surface soil hot spot areas; surface and subsurface soils in the former plant process area; surface and subsurface soils along the historic drainage ditch running from the former plant process area to Silver Bow Creek; and subsurface soils near the groundwater table which have been contaminated by floating woodtreating product. The preferred treatment technology for contaminated soils is above ground biological treatment. However, design studies would be conducted to determine if soil washing would be more effective at comparable cost for treating these soils. If so, soil washing may be substituted for biological treatment. Some contaminated soils and associated woodtreating fluid would remain in place due to inaccessibility and limits of excavation technology. These contaminated soils would be flushed with water to recover as much oily woodtreating fluid as possible, followed by enhanced biological treatment in place.

Contaminated groundwater and any residual woodtreating fluids left after excavation would be contained from further migration using hydraulic and/or physical barriers. Groundwater would be extracted and treated above ground in the water treatment plant recently constructed by EPA. This facility presently consists of oil/water separation and granulated activated carbon treatment. The ultimate design of the groundwater treatment system may include the addition of biological means or ultraviolet oxidation (UV/oxidation), if cost effective. Additionally, oxygen, nutrients and possibly microorganisms would be added to water pumped back under ground to stimulate in-place biological treatment of residual soils and groundwater contamination. After groundwater containment has effectively reduced contaminant releases into Silver Bow Creek, residual contamination in Silver Bow Creek and near-creek groundwater would be remediated by natural attenuation and biodegradation. Containment of the contaminated groundwater would be required until aquifer cleanup was completed. The agencies anticipate that site remediation would be complete in approximately 30 years and after that time no further actions would be required.

The preferred remedy for oils and sludges currently in place at the site and recovered during site cleanup is off-site incineration. If off-site treatment or disposal is not possible, due to lack of off-site treatment capacity for example, oils and sludges may be incinerated on site. Contaminated debris and equipment would be decontaminated and disposed in an appropriately licensed off-site landfill.

Mark your calendar and get involved

Public involvement has been an integral part of the Superfund process at the Montana Pole site. MDHES will sponsor public involvement activities during the public review and comment period. MDHES encourages the public to comment on this Proposed Plan and all other supporting documentation in the administrative record.

PUBLIC COMMENT PERIOD -

The public comment period for this Proposed Plan and the related documents in the administrative record will be a minimum of 30 days from May 7 through June 7, 1993. Written and oral comments should be addressed to Brian Antonioli, Project Manager, Montana Department of Health and Environmental Sciences, Cogswell Building, P.O. Box 200901, Helena, MT 59620, phone: 1-800-648-8465 (in-state only) or 406-449-4067.

PUBLIC MEETING/HEARING -

MDHES will hold a public meeting/hearing Tuesday, May 25, 1993, at 7 p.m. at the Community Center at 25 West Front Street in Butte. MDHES and EPA representatives will present a brief summary of the identified preferred remedy and answer questions concerning the RI/FS and this Proposed Plan. During the hearing portion of the meeting, MDHES will accept and record formal oral comments. MDHES will have a court reporter transcribe all comments. MDHES will include in the Record of Decision responses to all comments received.

SITE DOCUMENT REPOSITORIES AND ADMINISTRATIVE RECORD -

MDHES has established and maintained repositories for site documents since the beginning of the remedial investigation. The repositories contain the major site documents, including the Remedial Investigation Report, the Baseline Risk Assessment, and the Feasibility Study Report upon which this Proposed Plan is based. With the Feasibility Study Report is a Position Paper submitted by ARCO which details ARCO's position on certain areas of disagreement between ARCO and MDHES. These documents may be checked out by the public. Montana Pole site document repositories are located at the Butte-Silver Bow Public Library, the Montana Tech Library in Butte and the State Library in Helena.

MDHES placed one copy of the administrative record for the site at the Montana Tech Library. The administrative record consists of specific documents about the site including sampling results, correspondence, and reports upon which the preferred remedy is based. The contents of the administrative record must remain at the Montana Tech Library, but a photocopy machine is available on the premises for public use. MDHES also maintains a copy of the administrative record at its Superfund Section office in Helena.

AGENCY STAFF AVAILABLE TO THE PUBLIC - MDHES and EPA have technical and public involvement specialists working on the Montana Pole site. MDHES will provide copies of past progress reports (newsletters for the public) upon request. MDHES and EPA personnel who will receive comments or supply additional information include:

Brian Antonioli, MDHES State Project Officer
Jane Heath Stiles, MDHES, Superfund Information Officer
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Sara Weinstock, EPA, Remedial Project Manager
U.S. EPA, Butte EPA Office
Butte/Silver Bow Courthouse, 155 West Granite St.
Butte, MT 59701
Phone: 406-782-7415 Fax: 406-782-3838

Site background

The Montana Pole and Treating Plant site is located at 202 West Greenwood Avenue, on the western edge of Butte, Montana, in the southeast quarter of Section 24, T3N, R8W (see Figures 1 and 2). Generally, the site is bordered on the north by Silver Bow Creek, on the south by Greenwood Avenue, on the west by a former smelter site and on the east by a railroad right-of-way. Two neighborhoods are within a quarter mile of the site. U.S. Interstate 15/90 runs across the site in an east-west direction and partitions the site into a northern and a southern section.

Montana Pole operated as a wood-treating facility from 1946 to 1984. During most of this period, a solution of about five percent pentachlorophenol (PCP) mixed with petroleum (diesel) was used to preserve poles, posts and bridge timbers. The PCP solution was applied to wood products in butt vats and pressure cylinders (retorts). Creosote was used as a wood preservative for a brief period in 1969.

In March 1983, a citizen filed a complaint concerning oil seeping into Silver Bow Creek near the Montana Pole facility. MDHES investigated

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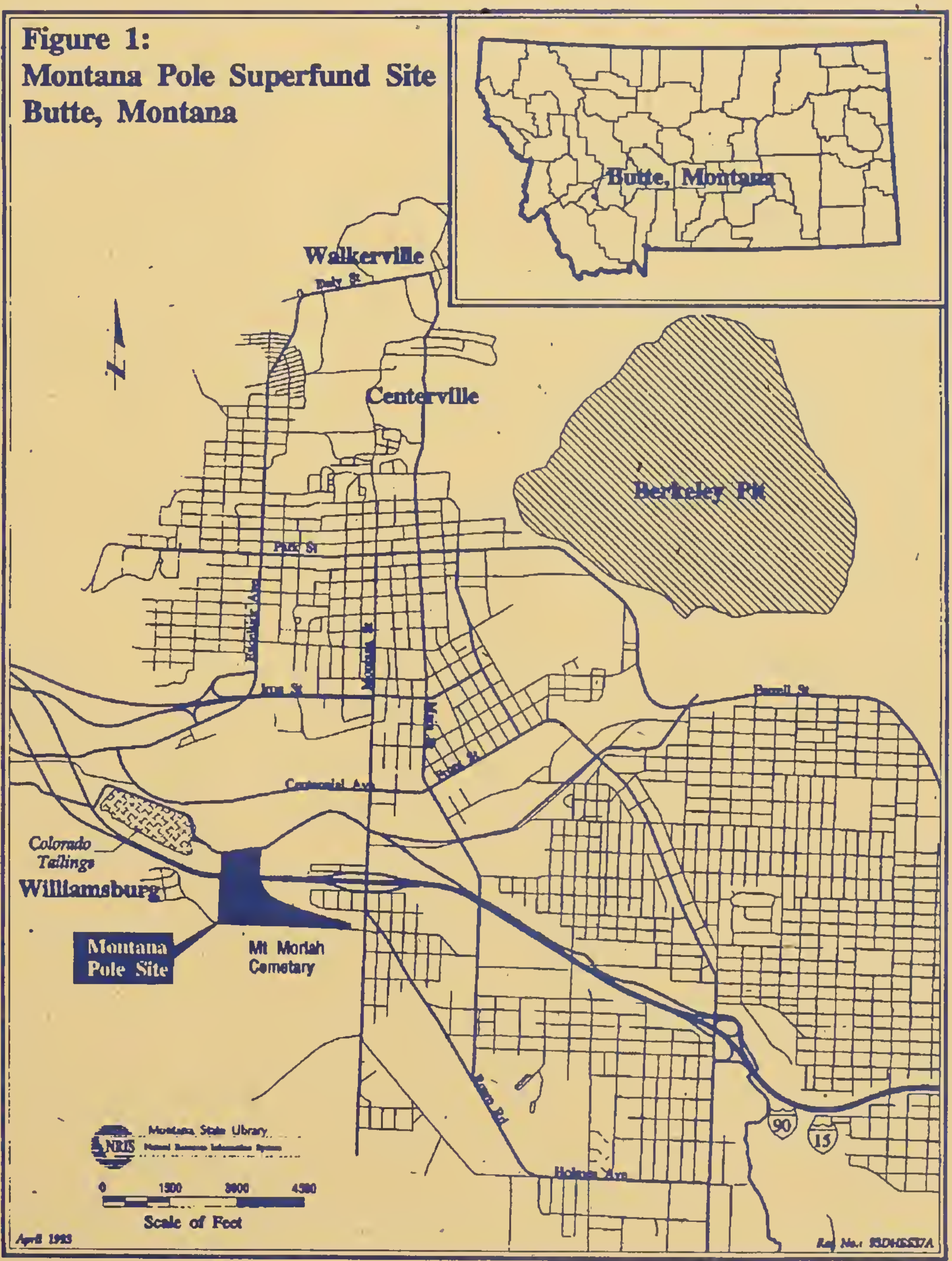

Figure 1:
Montana Pole Superfund Site
Butte, Montana

Montana Pole

Site background, cont.

the complaint and discovered an oil seep on the south side of Silver Bow Creek directly downgradient from the Montana Pole facility. Further investigation of the site revealed oil-saturated soils adjacent to the creek and on Montana Pole property. Subsequent sampling confirmed the presence of PCP, polycyclic aromatic hydrocarbons (PAHs), and dioxins/furans in site soils and oil samples. MDHES and EPA completed a preliminary assessment and site inspection (PA/SI) followed by a hazard ranking score in July 1985. [The Montana Pole facility was included on the National Priorities List of Superfund sites on July 22, 1987 (Fed. Reg. Vol. 52, 140 Pg. 17623).]

In July 1985, the EPA Emergency Response Branch began conducting a removal action on the site to minimize impacts to Silver Bow Creek and to stabilize the site. EPA excavated highly contaminated soils, bagged them and placed them in storage buildings (pole barns) constructed on site. Tanks, retorts, pipes and other hardware were dismantled and stored on site in a former sawmill building. Two groundwater interception/oil recovery systems were installed to alleviate oil seepage into the creek. Contaminated areas of the site and features of the groundwater recovery system were fenced to restrict public access.

In October 1989, EPA granted MDHES the initial enforcement funding to conduct potentially responsible party (PRP) noticing and administrative order negotiations and issuance. In April 1990, MDHES signed an administrative order on consent with ARCO under which ARCO agreed to conduct a remedial investigation and feasibility study (RI/FS) at the site. In June 1990, ARCO began the RI/FS following the MDHES- and EPA-approved RI/FS work plan. The remedial investigation complied with Superfund law, defined the nature and extent of contamination and provided information to complete the baseline human health and ecological risk assessments. The FS included the development, screening and evaluation of potential site remedies.

In June 1992, the EPA proposed a response action to control and recover the light non-aqueous phase liquid (LNAPL) (floating oils) identified during the RI. The action included the installation of a 890-foot sheet piling on the south side of Silver Bow Creek. The sheet piling is approximately 50 feet south of the creek. Ten recovery wells were installed on site. Eight of the wells are located south of Silver Bow Creek in a north/south line running perpendicular to the creek. Two wells were installed parallel to the creek; one on each end of the sheet piling. The wells are approximately 25 feet deep. Each well has two pumps: one to collect free-floating oil and pump it to an on-site storage tank; the other to pump contaminated groundwater to an on-site granular activated carbon treatment facility built by EPA. The water treatment facility went into operation January 22, 1993, at which time the system installed in 1985 was shut down.

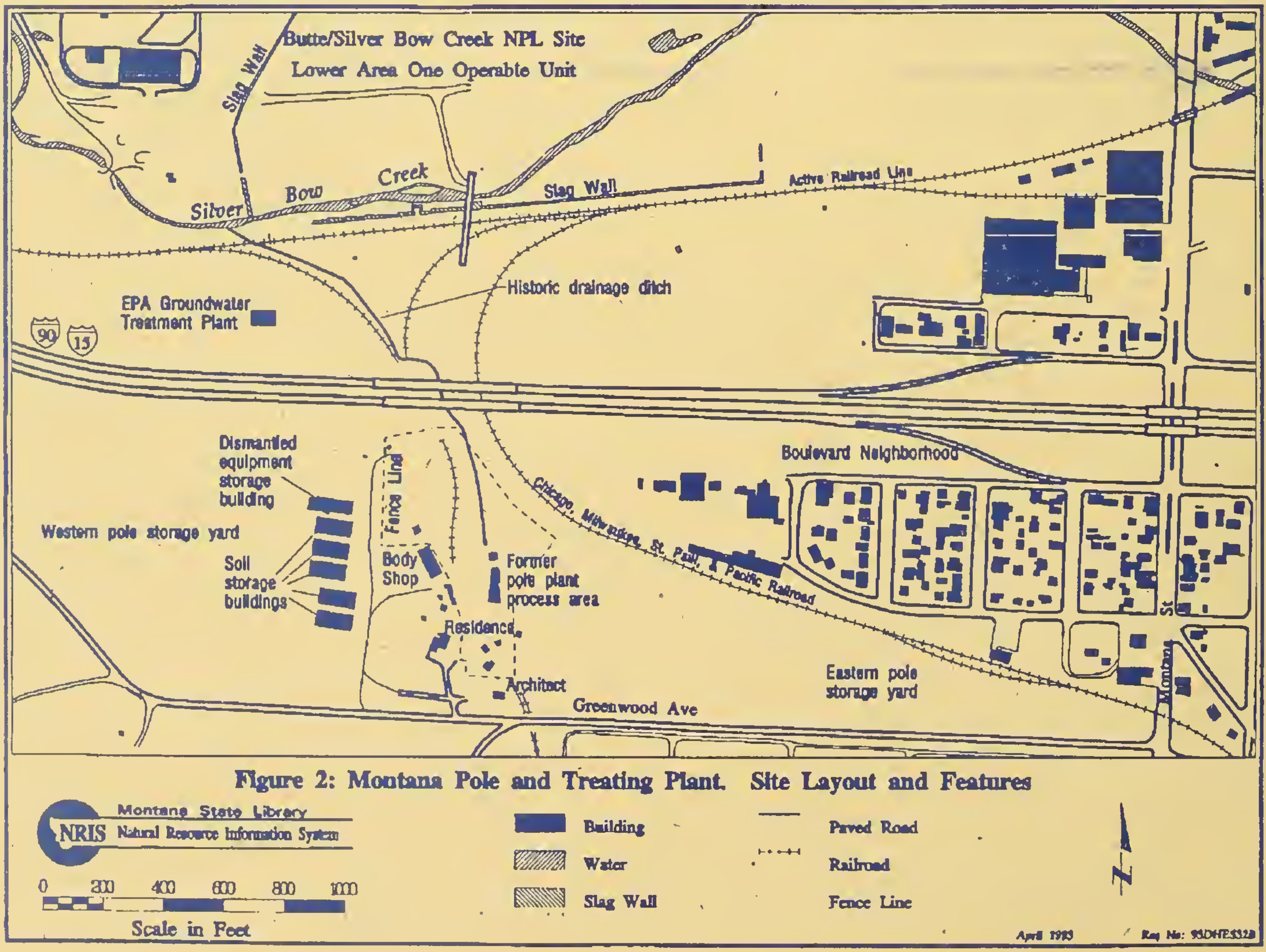

Figure 2: Montana Pole and Treating Plant. Site Layout and Features

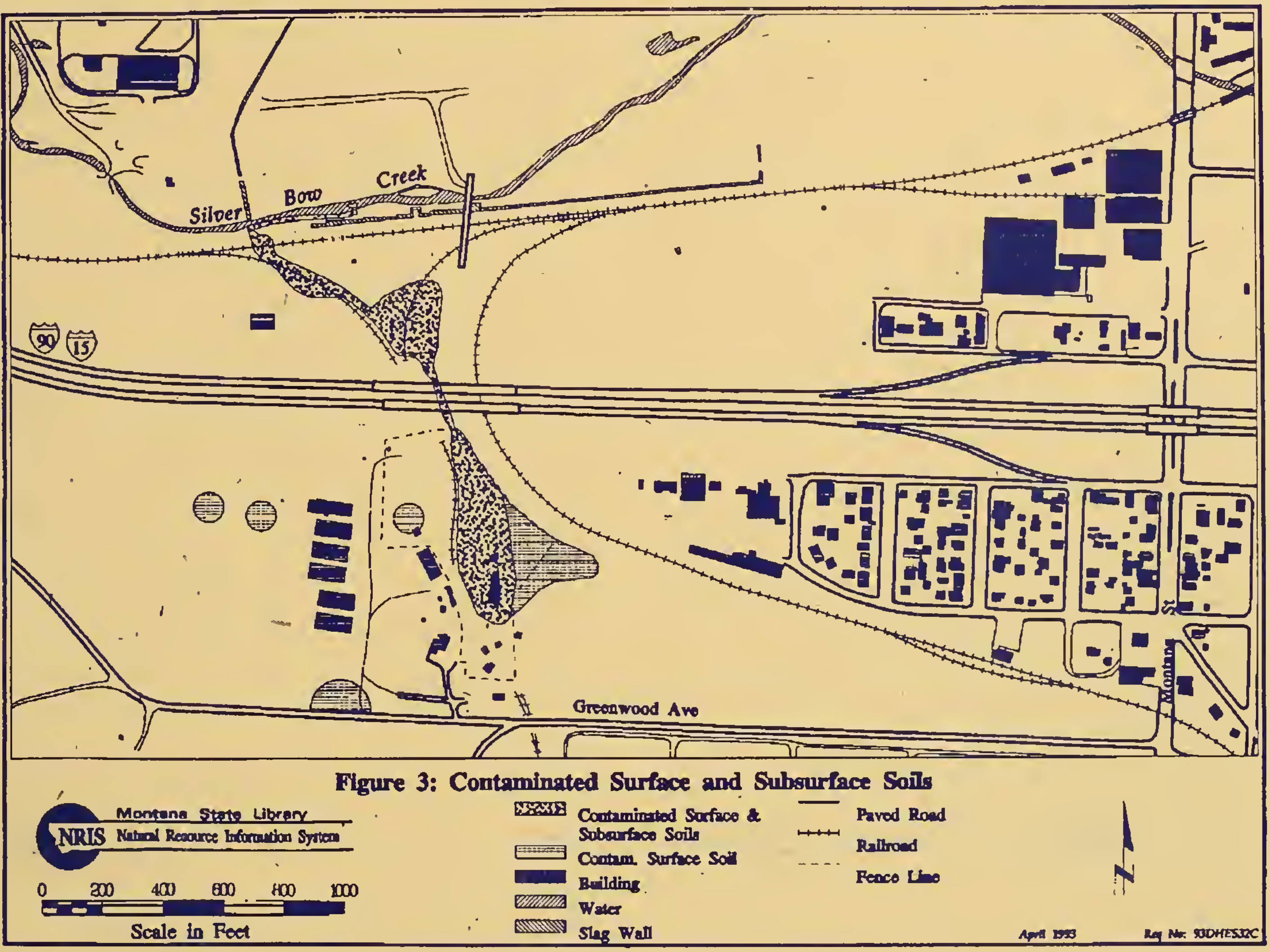

Figure 3: Contaminated Surface and Subsurface Soils

How extensive is the contamination?

Seven media were sampled during the RI: soils, groundwater, surface water, stream sediments, plant equipment, miscellaneous oils and miscellaneous sludges. The samples were typically analyzed for pentachlorophenol (PCP), polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), dioxins/furans and metals.

The RI concluded that soils contaminated with wood-treating chemicals are primarily located in the former wood treatment process area and along a drainage ditch which extends from the process area to Silver Bow Creek (see Figure 3). In addition, subsurface soils have been contaminated by wood-treating fluids floating on the groundwater table (see Figure 4). Contaminants found in soils included PCP, PAHs and dioxins/furans. The volume of these contaminated soils is approximately 226,000 cubic yards (a pickup truck holds approximately one cubic yard). Additionally, approximately 10,000 cubic yards of soils which were removed during the 1985 EPA removal action are stored on site in five storage buildings. PCP concentrations as high as 2,300 mg/kg (parts per million) were found in surface soil samples. A level of 2,300 parts per million is considered heavily contaminated. The highest concentrations of PCP (and other organic compounds) in the subsurface were generally found in samples collected at or near the water table. A distinct plume of wood-treating product is floating at the top of the water table over an area that begins at the former plant process area and continues north to Silver Bow Creek.

The RI indicated that groundwater contamination at the site is limited to a depth of approximately 40 feet. The highest concentrations of groundwater contaminants are found in the top portion of the aquifer, in close association with the floating wood-treating fluids referred to as light non-aqueous phase liquid (LNAPL). The approximate lateral extent of groundwater contamination and the LNAPL plume is shown in Figure 4. The contaminated groundwater plume extends to Silver Bow Creek, where releases of LNAPL and contaminated groundwater into the creek are occurring. Elevated concentrations of site contaminants are found in Silver Bow Creek and near-creek groundwater downstream of the site. In addition to the contaminated soils and groundwater, contaminated equipment, debris and approximately 26,500 gallons of recovered oils and sludges are present at the site.

Health and ecological risks explained

As part of the remedial investigation and feasibility study, human health and ecological risk assessments were developed to:

- provide an analysis of baseline risk (potential risk if no remedy occurs) and help determine the need for action;
- provide a basis for determining cleanup levels (concentrations) that are protective of public health and the environment;
- provide a basis to compare potential health and ecological impacts of various cleanup alternatives; and
- provide a consistent process to evaluate and document potential public health and ecological threats at the site.

Human health risks:

A risk assessment is a procedure which uses a combination of facts and assumptions to estimate the potential for adverse effects on human health from exposure to contaminants found at a site. EPA has set a risk range from one-in-ten-thousand (1 in 10,000 or 10^{-4}) to one-in-one-million (1 in 1,000,000 or 10^{-6}) excess cancer incidents as the cleanup goal for Superfund sites. A risk of one-in-one-million means that one person out of one million could develop cancer as a result of a lifetime exposure to the site contaminants. This refers to the incremental risk that is above and beyond the probability that an individual may develop some form of cancer from everyday sources.

The level of concern for non-carcinogenic contaminants is determined by calculating a "hazard index." The hazard index reflects the degree that chemical contaminants might cause poisoning, burns, irritations and/or other health problems. If the hazard index exceeds one (1), there may be concern for potential noncancerous effects from exposure to the site contaminants.

Based on the results of field sampling, PCP, PAHs and dioxins/furans were identified as the major site-related contaminants of concern for the risk assessment. In the baseline risk assessment, risks were estimated for potential trespassers, workers and residents being exposed to the contaminated materials, assuming that no remedial action was taken at the site. Excess cancer and non-cancer risks were estimated for direct contact, ingestion and inhalation of the contaminated material.

The baseline risk assessment identified potential cancer risks greater than 1 in 10,000 and potential noncancerous health risks exceeding a hazard index of 1.0, indicating that cleanup (remedial) action is needed. Without remediation, future on-site residents' potential cancer risks could be as high as two in 10 for ingestion of groundwater, seven in 10,000 for direct contact with soils, two in 1,000 for incidental ingestion of soils and two in 100 for ingestion of home-grown vegetables. Potential cancer risks for inhalation were considered to be less than 1 in 1,000,000. For future on-site residents, potential noncancerous health hazard indices ranged up to 6,000 for ingestion of groundwater, up to 36 for direct contact with soils, up to 94 for incidental ingestion of soils and up to 680 for ingestion of home-grown vegetables.

Site land use has historically been industrial with residential use by the business owner as allowed by zoning. Site groundwater has been used for residential purposes and groundwater in adjacent areas is currently being used for drinking and for lawn watering. Future land and groundwater use could be expected to be similar to these past and present uses.

Ecological risks:

The ecological risk assessment for the Montana Pole site evaluated the potential for harm to terrestrial and aquatic populations following exposure to contaminants. Silver Bow Creek is presently degraded by metals contamination and does not support a viable fishery. The risk assessment concluded if Silver Bow Creek is remediated for metals contamination (which is being addressed under the Silver Bow Creek/Butte Area NPL site) the presence of site contaminants including PCP could inhibit the recovery of fish in the stream.

Conclusions:

MDHES has concluded through the baseline risk assessment that there are excessive human health cancer risks and excessive noncancerous health hazards associated with hazardous substances at the site. Actual or threatened releases of hazardous substances from this site, if not addressed by cleanup, may present a current or potential threat to public health, welfare or the environment. Therefore, remedial action is required in order to reduce these potential risks.

Cleanup levels:

The cleanup levels proposed for site soils are 8.2 mg/kg (parts per million) PCP, 236 ug/kg (parts per billion) carcinogenic PAHs and 0.048 ug/kg (parts per billion) dioxins/furans. These levels would be protective to within a 1 in 10,000 cancer risk level for residential and industrial land use at the site.

The cleanup levels proposed for site groundwater include maximum contaminant levels (MCLs) and proposed MCLs. For those contaminants of concern for which MCLs or proposed MCLs do not exist, cleanup levels would be based on a 1 in 1,000,000 cancer risk level or a 0.9 hazard index for ingestion of groundwater.

Mail or call in your comments. The public comment period begins May 7 and ends June 7, 1993.

(See the 'Get Involved' section on page 2)

What are the alternatives ?

A brief description of site cleanup alternatives the agencies considered in the Feasibility Study Report follows. The estimated present worth cost of each alternative includes capital cost and annual operation and maintenance cost. Remedial action time frames are limited to 30 years for analysis, even for those alternatives requiring perpetual operation and maintenance, since costs beyond 30 years have minimal present value.

The cleanup alternatives presented in the Feasibility Study Report were developed before EPA constructed the groundwater treatment system which came on-line in January 1993. Therefore, the assumed design and costs of the alternatives do not incorporate the EPA system. However, the presence of the EPA system was addressed in the FS and potential use of the system was considered. Utilization of the EPA groundwater treatment system would reduce the overall costs (presented below) for the alternatives which include groundwater treatment systems.

Alternative 1: No Action

Estimated present worth cost: $ 2,310,000 to $ 2,350,000
Implementation time: Not Applicable

Superfund law requires that agencies consider the no action alternative. This alternative is used as a baseline against which to compare the other alternatives. Under Alternative 1, no further action (other than the EPA's removal actions currently being conducted at the site) would be undertaken. Contaminated soils, oils, sludges, equipment and debris would remain on site. Contamination would continue to migrate and impact groundwater and Silver Bow Creek. Only the current fence (installed as part of EPA's removal actions) would limit trespasser access to the site. Existing institutional controls would allow most types of land uses. The costs for the no-action alternative are associated with maintaining operation of the existing groundwater containment and treatment system and continued administration of institutional controls for a period of 30 years. Actual costs and efforts associated with the no action alternative would be incurred indefinitely beyond the 30-year period.

Alternative 2: Additional Institutional Controls and Groundwater Monitoring

Estimated present worth cost: $ 3,270,000 to $ 4,400,000
Implementation time: 1 year

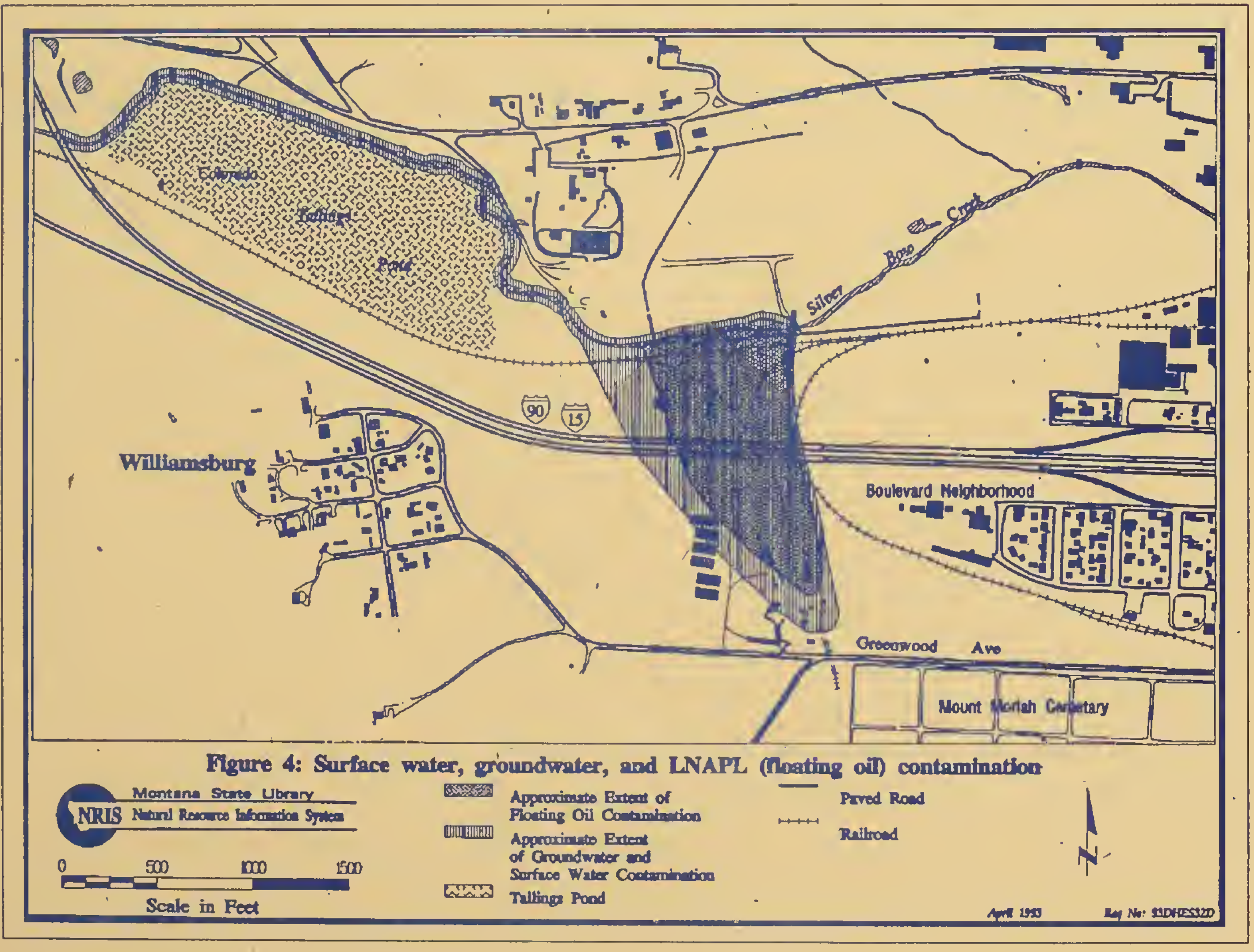

Figure 4: Surface water, groundwater, and LNAPL (floating oil) contamination

This alternative would involve implementing institutional controls in an attempt to limit human exposure to contaminants. Additional institutional controls, beyond those currently in existence, would be implemented to further restrict the development of site land. These controls could include deed restrictions that prevent residential development and construction activities in contaminated areas and modifications to the zoning laws and building codes. The zoning laws could be modified such that certain land uses including kennels, stables and stockyards would be prohibited. Building codes could be modified to restrict construction depths to less than the depth of the water table. Only the current fence (installed as part of EPA's removal actions) would limit trespasser access to the site.

The EPA's groundwater controls currently being conducted at the site would continue. Contaminated soils, oils, sludges, equipment and debris would remain on site. Contamination would continue to migrate and impact groundwater and Silver Bow Creek. This alternative would include monitoring of downgradient (the groundwater equivalent of downstream) and vertical migration of dissolved groundwater contamination and LNAPL.

The costs for Alternative 2 are associated with maintaining operation of the existing groundwater containment and treatment system, implementation of additional institutional controls, continued administration of institutional controls and site monitoring. Total estimated costs for Alternative 2 assume that the action would only occur for a period of 30 years. Because the site would continue to be contaminated and pose risks to human health and the environment indefinitely, actual costs and efforts associated with maintaining Alternative 2 would be incurred indefinitely beyond the 30-year period.

Alternative 3: Soil Capping and Groundwater Containment and Treatment

ALTERNATIVE 3A:

- Surface capping of contaminated soils;
- Treatment of previously removed soils and a limited amount of excavated soils using on-site incineration;
- Containment and treatment of groundwater and LNAPL;
- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 34,620,000 to $ 60,130,000
Implementation time: 2 years - soils
30 years - groundwater

Under Alternative 3A, contaminated soils in the former wood-processing area and along the historic drainage ditch (see Figure 3) would be capped to prevent direct human contact and reduce infiltration of precipitation through the contaminated soils. Contaminated surface soil hot spots outside these areas would be excavated and consolidated with soils in the process area prior to capping. The cap would cover an area of approximately 170,000 square feet. (A football field is 57,600 square feet.) Approximately 213,000 cubic yards of contaminated soils would remain in place under this alternative.

Soils previously excavated during EPA's 1985 removal action (bagged soils), contaminated soils excavated during construction of groundwater remediation facilities (e.g., collection trenches), and contaminated soils located near Silver Bow Creek and downgradient of the groundwater collection system would be treated in an on-site incinerator. The estimated volume of soil treated under this alternative is 23,000 cubic yards, which includes approximately 10,000 cubic yards of previously removed soils plus approximately 13,000 cubic yards of excavated soils. Other soil actions which would be necessary under Alternative 3A include filling excavated areas using treated soils, surface grading and revegetation.

Under this alternative, oils and sludges currently in place at the site would be incinerated on-site along with soils. LNAPL recovered by the groundwater system while the incinerator was operating would also be incinerated. LNAPL recovered after on-site incineration has been discontinued would be incinerated off-site. Contaminated debris and equipment would be decontaminated and disposed of in an appropriately licensed off-site landfill.

A groundwater containment and treatment system would be constructed to contain the LNAPL and dissolved groundwater contaminant plumes and capture the contamination before it discharges to Silver Bow Creek. This system would include an extensive network of extraction and containment mechanisms (trenches, extraction wells, physical/hydraulic barriers). Groundwater treatment above ground is assumed to consist of oil/water separation, bioreactor treatment and carbon polishing. Other modes of treatment such as UV/oxidation or granulated activated carbon (GAC) may be utilized instead of a bioreactor depending on detailed design analysis. Treatment of contaminated groundwater would occur to the degree necessary to meet applicable environmental standards and health-based criteria prior to discharge. Additionally, an in-situ (in-place) bioremediation process would be implemented to assist in long-term cleanup of groundwater and subsurface soils.

The specific design of the groundwater system would take place during the remedial design and remedial action phase of site cleanup. The groundwater extraction and treatment system could utilize the groundwater treatment plant constructed at the site by EPA. Groundwater and LNAPL in and around the site would be monitored to evaluate the effectiveness of the recovery and treatment system. The same institutional controls would be implemented as those discussed under Alternative 2.

Total estimated costs for Alternative 3A assume the action would only occur for a period of 30 years. Since the site would continue to be contaminated indefinitely, actual costs and efforts associated with site monitoring, enforcement of institutional controls and operation and maintenance of the cap and the groundwater system would be incurred indefinitely beyond the 30 year period.

ALTERNATIVE 3B:

- Surface capping;
- Treatment of previously removed soils and a limited amount of excavated soils using biological land treatment;
- Containment and treatment of groundwater and LNAPL;

- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 21,060,000 to $ 36,640,000
Implementation time: 3 years - soils
30 years - groundwater

Alternative 3B is the same as Alternative 3A except that soils would be treated using biological land treatment and all oils and sludges would be incinerated off-site. Biological land treatment is not expected to achieve the degree of treatment provided by incineration; however, allowable final contaminant levels are anticipated. Design studies would be utilized to determine achievable treatment efficiencies and identify any additional remedial actions which may be necessary in conjunction with biological land treatment.

ALTERNATIVE 3C:

- Surface capping;
- Treatment of previously removed soils and a limited amount of excavated soils using soil washing;
- Containment and treatment of groundwater and LNAPL;
- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 27,720,000 to $ 43,780,000
Implementation time: 2 years - soils
30 years - groundwater

Alternative 3C is the same as Alternative 3A except that soils would be treated using soil washing and all oils and sludges would be incinerated off-site. Residual fine soils from the soil-washing process which do not meet cleanup criteria would be further treated in a bioslurry reactor. The volume of residual fine soils requiring further treatment is estimated at five percent of the total volume of treated soils. As with biological land treatment, soil washing is not expected to achieve the degree of treatment provided by incineration; however, allowable final contaminant levels are anticipated. Design studies would be utilized to determine achievable treatment efficiencies and identify any additional remedial actions which may be necessary in conjunction with soil washing.

Alternative 4: Partial Excavation and Treatment of Soils and Groundwater Containment and Treatment

ALTERNATIVE 4A

- Excavation of contaminated surface and subsurface soils and treatment using on-site incineration;
- Treatment of previously removed soils using on-site incineration;
- Containment and treatment of groundwater and LNAPL;
- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 77,880,000 to $ 110,840,000
Implementation time: 5 years - soils
30 years - groundwater

Under Alternative 4A, accessible contaminated soils in areas where surface soil concentrations are above cleanup levels and where contamination above cleanup levels extends from the surface to the groundwater table (see Figure 3) would be excavated and treated using an on-site incinerator. The areas of the site which would be excavated under Alternative 4A correspond to surface soil hot spots, the former process area, the waste water discharge ditch and contaminated soils located near Silver Bow Creek and downgradient of the groundwater collection system. Bagged soils previously excavated during EPA's 1985 removal action and contaminated soils excavated from construction of groundwater remediation facilities (e.g., collection trenches) would also be treated in an on-site incinerator. Excavation in surface soil hot spot areas would occur to a depth of approximately three feet. Subsurface excavation would occur to a depth of approximately four feet below the groundwater table. The estimated volume of soil excavated under this alternative is 105,000 cubic yards. The estimated volume of soil treated under this alternative is 115,000, cubic yards which includes the bagged soils. Other soil actions which would be necessary under Alternative 4A include filling excavated areas using treated soils, surface grading and revegetation.

Under Alternative 4A, approximately 124,000 cubic yards of contaminated soils would remain in place. This includes areas beneath the interstate highway which are considered inaccessible and subsurface soils located outside of the former process and drainage ditch areas which are contaminated by LNAPL near the groundwater table (see Figure 4). These soils would be addressed through LNAPL extraction, water flushing and in-situ bioremediation.

Under this alternative, oils and sludges currently in place at the site would be incinerated on-site along with soils. LNAPL recovered by the groundwater system while the incinerator was operating would also be incinerated. LNAPL recovered after on-site incineration has been discontinued would be incinerated off-site. Contaminated debris and equipment would be decontaminated and disposed of in an appropriately licensed off-site landfill. A groundwater containment and treatment system, similar to the Alternative 3 system, would be constructed to contain the LNAPL and dissolved groundwater contaminant plumes and capture the contamination before it discharges to Silver Bow Creek. This system would include an extensive network of extraction and containment mechanisms (trenches, extraction wells, physical/hydraulic barriers). Groundwater treatment above ground is assumed to consist of oil/water separation, bioreactor treatment and carbon polishing. Other modes of treatment such as UV/oxidation or granulated activated carbon (GAC) may be utilized instead of a bioreactor depending on detailed design analysis. Treatment of contaminated groundwater would occur to the degree necessary to meet applicable environmental standards and health-based criteria prior to discharge. Additionally, an in-situ bioremediation process would be implemented to assist in long-term cleanup of groundwater and subsurface soils. Remediation of the contaminated aquifer to drinking water levels is a goal of this alternative.

The specific design of the groundwater system would take place during the remedial design and remedial action phase of site cleanup. The groundwater extraction and treatment system could utilize the groundwater system installed at the site by EPA. Groundwater and LNAPL in and around the site would be monitored to evaluate the effectiveness of the recovery and treatment system. The same institutional controls would be implemented as those discussed under Alternative 2. Institutional controls may be reduced or lifted as the remedial action progresses toward completion.

Total estimated costs for Alternative 4A assume that the groundwater action would only occur for a period of 30 years. Although groundwater aquifer remediation to cleanup levels is a goal under this alternative, some source areas would remain and be treated in place over the long term. Therefore, actual costs and efforts associated with site monitoring, enforcement of institutional controls and operation and maintenance of the groundwater system may be incurred beyond 30 years.

ALTERNATIVE 4B

- Excavation of contaminated surface and subsurface soils and treatment using biological land treatment;
- Treatment of previously removed soils using biological land treatment;
- Containment and treatment of groundwater and LNAPL;
- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 24,780,000 to $ 47,570,000
Implementation time: 6 years - soils
30 years - groundwater

Alternative 4B is the same as Alternative 4A except that soils would be treated using biological land treatment and all oils and sludges would be incinerated off-site. Biological land treatment is not expected to achieve the degree of treatment provided by incineration; however, allowable final contaminant levels are anticipated. Design studies would be utilized to determine achievable treatment efficiencies and identify any additional remedial actions which may be necessary in conjunction with biological land treatment.

ALTERNATIVE 4C

- Excavation of contaminated surface and subsurface soils and treatment using soil washing;
- Treatment of previously removed soils using soil washing;
- Containment and treatment of groundwater and LNAPL;
- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 35,450,000 to $ 52,660,000
Implementation time: 3 years - soils
30 years - groundwater

Alternative 4C is the same as Alternative 4A except that soils would be treated using soil washing and all oils and sludges would be incinerated off-site. Residual fine soils from the soil washing process which do not meet cleanup criteria would be further treated in a bioslurry reactor. The volume of residual fine soils requiring further treatment is estimated at five percent of the total volume of treated soils. As with biological land treatment, soil washing is not expected to achieve the degree of treatment provided by incineration; however, allowable final contaminant levels are anticipated. Design studies would be utilized to determine achievable treatment efficiencies and identify any additional remedial actions which may be necessary in conjunction with soil washing.

Alternative 5: Total Excavation and Treatment of Soils and Groundwater Containment and Treatment

ALTERNATIVE 5A

- Excavation of all accessible contaminated soils and treatment using on-site incineration;
- Treatment of previously removed soils using on-site incineration;
- Containment and treatment of groundwater and LNAPL;
- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 99,870,000 to $ 156,220,000
Implementation time: 8 years - soils
30 years - groundwater

Under Alternative 5A, all accessible contaminated site soils would be excavated and treated in an on-site incinerator. This includes the areas identified under Alternative 4 in addition to subsurface soils impacted by LNAPL. These areas correspond to surface soil hot spots, the former process area, the waste water discharge ditch and soil areas near the groundwater table which have been impacted by LNAPL. Bagged soils previously excavated during EPA's removal action would also be treated in an on-site incinerator. Excavation in surface soil hot spot areas would occur to a depth of approximately three feet. Subsurface excavation would occur to a depth of approximately four feet below the groundwater table. Excavation of the soils impacted by the LNAPL is assumed to extend from two feet above to four feet below the groundwater table. The estimated volume of soil excavated under this alternative is 279,000 cubic yards which includes about 94,000 cubic yards of uncontaminated soil requiring excavation to access underlying LNAPL-impacted soils. The total estimated volume of soil treated under this alternative is 195,000 cubic yards and includes the bagged soils. Other necessary activities would include filling excavated areas using treated soils, surface grading and revegetation.

Under Alternative 5A, approximately 44,000 cubic yards of contaminated soils would remain in place. This includes areas beneath the interstate highway which are considered inaccessible. These soils would be addressed through LNAPL extraction, water flushing and in-situ bioremediation.

Under this alternative, oils and sludges currently in place at the site would be incinerated on-site along with soils. LNAPL recovered by the groundwater system while the incinerator was operating would also be incinerated. LNAPL recovered after on-site incineration has been discontinued would be incinerated off-site. Contaminated debris and equipment would be decontaminated and disposed of in an appropriately licensed off-site landfill. A groundwater containment and treatment system would be constructed to contain the dissolved groundwater contaminant plume and any residual LNAPL and capture the contamination before it discharges to Silver Bow Creek. However, the groundwater containment and extraction design for Alternative 5 would entail a less extensive network of extraction and containment mechanisms (trenches, extraction wells, physical/hydraulic barriers) than under Alternatives 3 or 4 because excavation of all accessible source areas containing LNAPL would occur as part of this alternative. Groundwater treatment above ground is assumed to consist of oil/water separation, bioreactor treatment and carbon polishing. Other modes of treatment such as UV/oxidation or granulated activated carbon (GAC) may be utilized instead of a bioreactor depending on detailed design analysis. Groundwater treatment above ground would occur to the degree necessary to meet applicable environmental standards and health-based criteria prior to discharge. Additionally, an in-situ bioremediation process would be implemented to assist in long-term cleanup of groundwater and residual subsurface soil contamination. Remediation of the contaminated aquifer to drinking water levels is a goal of this alternative.

The specific design of the groundwater system would take place during the remedial design and remedial action phase of site cleanup. The groundwater extraction and treatment system could utilize the groundwater treatment plant installed at the site by EPA. Groundwater and LNAPL in and around the site would be monitored to evaluate the effectiveness of the recovery and treatment system. The same institutional controls would be implemented as those discussed under Alternative 2. Institutional controls may be reduced or lifted as the remedial action progresses toward completion.

Total estimated costs for Alternative 5A assume that the groundwater action would occur for a period of 30 years. Although groundwater remediation to cleanup levels is expected under this alternative, some inaccessible source areas (under the interstate highway) would remain and be treated in place. Therefore, actual costs and efforts associated with site monitoring, enforcement of institutional controls and operation and maintenance of the groundwater treatment system for the inaccessible source areas (such as under the interstate highway) may be incurred beyond 30 years.

ALTERNATIVE 5B (preferred alternative)

- Excavation of all accessible contaminated soils and treatment using biological land treatment;
- Treatment of previously removed soils using biological land treatment;
- Containment and treatment of groundwater and LNAPL;
- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 27,530,000 to $ 55,200,000
Implementation time: 11 years - soils
30 years - groundwater

Alternative 5B is the same as Alternative 5A except that soils would be treated using biological land treatment and all oils and sludges would be incinerated off-site. Biological land treatment is not expected to achieve the degree of treatment provided by incineration; however, allowable final contaminant levels are anticipated. Design studies would be utilized to determine achievable treatment efficiencies and identify any additional remedial actions which may be necessary in conjunction with biological land treatment.

ALTERNATIVE 5C

- Excavation of all accessible contaminated soils and treatment using soil washing;
- Treatment of previously removed soils using soil washing;
- Containment and treatment of groundwater and LNAPL;
- Treatment of oily wastes, sludges, equipment and debris; and
- Groundwater monitoring and institutional controls

Estimated present worth cost: $ 48,080,000 to $ 78,180,000
Implementation time: 4 years - soils
30 years - groundwater

Alternative 5C is the same as Alternative 5A except that soils would be treated using soil washing and all oils and sludges would be incinerated off-site. Residual fine soils from the soil washing process which do not meet cleanup criteria would be further treated in a bioslurry reactor. The volume of residual fine soils requiring further treatment is estimated at five percent of the total volume of treated soils. As with biological land treatment, soil washing is not expected to achieve the degree of treatment provided by incineration; however, allowable final contaminant levels are anticipated. Design studies would be utilized to determine achievable treatment efficiencies and identify any additional remedial actions which may be necessary in conjunction with soil washing.

Evaluating the alternatives

Superfund law requires that the agencies evaluate and compare the remedial cleanup alternatives based on the nine criteria listed below. The first two are threshold criteria and must be met unless applicable or relevant and appropriate requirements (ARARs) waivers are granted. This proposed plan discusses the evaluation and comparison based on the first eight criteria. After the public comment period is complete, the agencies will evaluate the alternatives based on the remaining criterion of community acceptance and present that evaluation in the record of decision. The preferred remedy must provide the best balance of the selection criteria.

The nine criteria:

1. Overall protection of human health and the environment addresses whether or not a remedy provides adequate protection and describes how potential risks posed through each pathway are

eliminated, reduced or controlled through treatment, engineering controls or institutional controls.

2. Compliance with applicable or relevant and appropriate requirements (ARARs) addresses whether or not a remedy will comply with identified federal and state environmental laws.

3. Long-term effectiveness and permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time.

4. Reduction of toxicity, mobility and volume through treatment refers to the degree that the remedy reduces toxicity, mobility and volume of the contamination.

5. Short-term effectiveness addresses the period of time needed to complete the remedy and any adverse impact on human health and the environment that may be posed during the construction and implementation period.

6. Implementability refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.

7. Cost evaluates the estimated capital costs and operation and maintenance costs of each alternative for 30 years.

8. State agency acceptance indicates whether the state concurs with, opposes or has no comment on the preferred alternative. However, for the Montana Pole site, the state is the lead management agency and EPA is the support agency. As such, the state has identified the preferred remedy and EPA has agreed with that identification.

9. Community acceptance is based on whether community concerns are addressed by the preferred remedy and whether or not the community has a preference for a remedy. MDHES and EPA are compelled by law to balance community concerns with all of the other criteria. After the public comment period, MDHES and EPA will complete the evaluation of the alternatives in light of public comments received.

The evaluation:

Following is a summary of the agencies' evaluation and comparison of alternatives. Additional detail evaluating the alternatives is presented in the Feasibility Study report.

1) Overall protection of public health and the environment: Alternatives 1 and 2 are not expected to provide adequate protection of public health and the environment. Alternatives 3A through 5C would be protective of public health and the environment. However, the degree of protection provided by Alternatives 3A, 3B, and 3C is dependent upon effective long-term maintenance of the cap and the groundwater system. Alternatives 5A, 5B and 5C would provide the greatest degree of protection of public health and the environment.

2) Compliance with applicable or relevant and appropriate requirements (ARARs): Alternatives 1 and 2 do not meet chemical-specific ARARs for groundwater or surface water. Alternatives 3, 4 and 5 are expected to meet chemical-specific ARARs for surface water, location-specific ARARs and action-specific ARARs. Achieving chemical-specific ARARs for groundwater is not likely under Alternative 3 because most source areas would remain in place. Achieving chemical-specific ARARs in groundwater under Alternative 4 is uncertain because, although a large volume of source material is removed, a substantial amount of source material would remain in place and require long-term remediation. Achieving chemical-specific ARARs for groundwater may be expected under Alternative 5 since all accessible source areas are removed.

3) Long-term effectiveness and permanence: Alternatives 1 and 2 provide no long-term effectiveness or permanence for reducing risks to human health and the environment beyond those currently in existence at the site.

Alternatives 3, 4 and 5 permanently address the oils and sludges, contaminated equipment and debris.

Excavated soils are most effectively and permanently treated by incineration under Alternatives 3A, 4A, and 5A. Biological land treatment and soil washing under Alternatives 3B, 3C, 4B, 4C, 5B, and 5C are not expected to be as effective as incineration but would permanently reduce the levels of contamination and are expected to reduce contamination to allowable levels. Information gathered during the FS indicates that soil washing may offer greater effectiveness in treating soils at the site than biological land treatment. This could be further determined during design studies. Capping under Alternative 3 is subject to deterioration over time and requires long-term maintenance.

Groundwater containment and treatment systems under Alternatives 3, 4 and 5 could all be effective for containing contaminated groundwater, limiting contaminant migration, and reducing impacts to Silver Bow Creek to allowable levels. Under Alternative 3, the groundwater system is expected to require operation and maintenance indefinitely, since only minimal soil excavation and treatment is planned. Under Alternative 4, the overall effectiveness of groundwater remediation is expected to be greater than under Alternative 3, because a large volume of contaminated soils and associated LNAPL is excavated and treated. Operation and maintenance of the groundwater system under Alternative 4 is expected to be required for a shorter period of time than under Alternative 3. Groundwater treatment under Alternative 5 is anticipated to have the greatest effectiveness of the alternatives because all accessible contaminated soils and LNAPL are excavated and treated. Under Alternative 5, operation and maintenance of the groundwater system is expected to be required for a shorter period of time than under either Alternative 3 or Alternative 4. Because Alternative 5 captures and treats the greatest percentage of continuing sources of contamination, Alternative 5 provides the greatest assurance of long-term effectiveness and permanence.

4) Reduction of toxicity, mobility and volume: Alternatives 1 and 2 provide no reduction of mobility, toxicity, or volume through treatment beyond that provided by the actions currently in place at the site. Alternatives 3, 4 and 5 reduce the toxicity and

volume of oils and sludges through either on-site incineration or off-site incineration. The toxicity of contaminated equipment and debris is reduced by decontamination under Alternatives 3, 4 and 5.

The toxicity, mobility and volume of contaminants in excavated soils is effectively eliminated by incineration under Alternatives 3A, 4A and 5A. Biological land treatment and soil washing under Alternatives 3B, 3C, 4B, 4C, 5B and 5C reduce the toxicity and volume of contaminants in soils but not to the degree provided by incineration. Soil washing may reduce toxicity of contaminated soils more than biological land treatment.

Alternative 3 provides minimal reduction of toxicity, mobility and volume of contaminated site soil because a cap is employed. Alternative 4 provides a greater reduction of toxicity, mobility and volume of contaminated site soil than Alternative 3 because a large amount of contaminated soils and associated LNAPL are excavated and treated. Alternative 5 provides the greatest reduction of toxicity, mobility and volume of contamination in soils of all the alternatives because all accessible contaminated soils and associated LNAPL are excavated and treated.

Alternatives 3, 4 and 5 groundwater treatment systems provide reduction of toxicity, mobility, and volume of groundwater contamination. Alternative 4 provides greater reduction of toxicity, mobility and volume of groundwater contamination than Alternative 3 because large sources of groundwater contamination (contaminated soils and LNAPL) are excavated and treated. Alternative 5 provides the greatest reduction of toxicity, mobility and volume of groundwater contamination of all the alternatives because all accessible sources of groundwater contamination (contaminated soils and LNAPL) are excavated and treated.

5) Short-term effectiveness: Under Alternatives 1 and 2, there is potential for workers and site visitors to be exposed to hazardous chemicals during implementation of the current removal actions being performed by EPA at the site. Adhering to safe work practices and using health and safety equipment is designed to limit the exposure to workers and visitors to within allowable levels.

During implementation of Alternatives 3, 4 or 5, there is potential for workers, site visitors, and nearby residents to be exposed to hazardous chemicals. Adhering to safe work practices and using health and safety equipment should limit the exposure to workers and visitors to within allowable levels. Dust and vapor release control activities can be implemented to limit this exposure potential. The incinerator used under Alternatives 3A, 4A and 5A can be designed to ensure emissions meet allowable standards. Given this and the short duration that the incinerator would be on-site, health risks to nearby residents would be low.

6) Implementability: Alternatives 1 through 5 are all technically implementable. For Alternatives 3, 4 and 5, the technologies for soil and groundwater treatment are readily implementable and have all been used at other sites. Prior to full-scale implementation of any of these treatment technologies at the site, design optimization studies are appropriate. On-site incineration may not be acceptable to the local community, and off-site incineration can be difficult to implement because off-site incinerator operators are reluctant to accept wastes containing dioxin. Under Alternative 3, clay cap maintenance and operation and maintenance of the groundwater system will have to continue indefinitely. Operation and maintenance of the groundwater systems under Alternatives 4 and 5 may be required beyond 30 years.

7) Cost: Alternative 1 is the least costly to implement. Alternative 5A is the most costly to implement. The 30-year present worth of Alternative 3 ranges from $21.1 million to $60.1 million; Alternative 4 ranges from $24.8 million to $111 million; and Alternative 5 ranges from $27.5 million to $156 million.

Incineration is substantially more expensive than either biological land treatment or soil washing. The cost estimates prepared by ARCO show soil washing to cost approximately twice as much as biological land treatment. Other estimates, including EPA and vendor estimates, place roughly comparable costs on soil washing and biological land treatment. Design studies could further define the relative costs of these treatment options.

Total estimated costs for all the alternatives assume that the action will only occur for a period of 30 years. Under Alternatives 1, 2 and 3, since the site will continue to be contaminated indefinitely, actual costs and efforts associated with remedial actions would be incurred indefinitely beyond the 30-year period. Although the goal under Alternatives 4 and 5 is to remediate the site in a finite period of time, the actual costs and efforts associated with remedial actions, particularly groundwater remediation, may be incurred beyond the 30-year period. Additionally, because the estimated groundwater remediation costs under Alternatives 3, 4 and 5 include entire system costs, utilization of the EPA groundwater treatment system would reduce the estimated costs of groundwater remediation as presented here and in the Feasibility Study Report.

8) State agency acceptance: The state has identified the preferred remedy and EPA has agreed with that identification. Alternatives 5B or 5C would satisfy this criterion.

9) Community acceptance: After the public comment period, MDHES and EPA will complete the evaluation of the alternatives based on public comments received.

Conclusions:

MDHES and EPA believe that Alternative 5B represents the best balance of considerations using the selection criteria. This alternative would ultimately remedy groundwater contamination and limit releases to Silver Bow Creek to allowable levels. All accessible contaminated soils and LNAPL would be excavated and treated, preventing this material from continuing to contaminate groundwater. The long-term effectiveness and degree of permanence of Alternative 5B is high. MDHES does not expect any unmanageable short-term risks associated with this alternative. This remedy would comply with all applicable or relevant and appropriate requirements. This remedy uses treatment technologies and permanent solutions to the maximum extent practicable and would be cost-effective. The preferred alternative would also satisfy the preference for treatment as a principal element of the remedy and for on-site remedies established in CERCLA. While certain other alternatives appear to better satisfy individual selection criteria, the preferred remedy more fully satisfies the entire range of the selection criteria. Alternative 5C, if it can be implemented at comparable cost, is also an acceptable approach.

MDHES and EPA have determined that the preferred remedy satisfies the statutory requirements in the Comprehensive Environmental Response, Compensation and Liability Act, section 121 (b), and that the preferred remedy:

- is protective of human health and the environment;
- complies with applicable or relevant and appropriate requirements;
- is cost effective;
- uses permanent solutions and alternative treatment technologies to the maximum extent practicable; and
- satisfies the statutory preference for treatment as a principal element of the preferred remedy.

Glossary

Administrative record:

The files containing all documents used to select a remedy at a Superfund site.

Baseline health and ecological risk assessments:

Studies conducted as part of the remedial investigation describing the risks posed to public health and the environment at a Superfund site.

Capping:

Covering contaminated soil with layers of barrier materials such as clean soil, clay, asphalt or concrete.

Groundwater:

Water contained beneath the earth's surface.

In-situ:

Activity occurring in-place or without removing the contaminated material.

Institutional controls:

Rules, regulations, laws or covenants that may be necessary to assure the effectiveness of a cleanup alternative, such as fencing, zoning restrictions, deed restrictions, well bans, etc.

Light non-aqueous phase liquid (LNAPL):

Woodtreating fluids (a mixture of petroleum oil and pentachlorophenol) which are found floating on the groundwater at the site.

Maximum Contaminant Levels (MCLs):

Federal drinking water standards which represent the maximum permissible level of a contaminant in a drinking water supply.

National Contingency Plan (NCP):

The federal regulations directing how Superfund is conducted.

Operation and maintenance costs:

The annual costs of ensuring that a remedy is protective.

Plume:

The three-dimensional volume of contaminated material in the groundwater, so named because its shape often resembles a feather or "plume."

Potentially responsible party (PRP):

Individual or organization who may be responsible for cleanup under Superfund law.

Remedy:

The response that addresses potential or actual threats to public health, welfare and/or the environment.

Record of decision (ROD):

A public document that explains which remedy will be used at a Superfund site. The record of decision includes the explanation of the agency's rationale for choosing a remedy.

Remedial investigation/feasibility study (RI/FS):

During the remedial investigation, the types, amounts and locations of contamination at a site are identified. In the feasibility study, alternatives for site remedy are identified, screened and compared.

Comments, please . . .

The Montana Department of Health and Environmental Sciences is requesting comments on this Proposed Plan and the underlying documents in the administrative record, including:

- The Baseline Risk Assessment Report
- The Remedial Investigation Report
- The Feasibility Study Report
- ARCO's RI/FS Position Paper

SPEAK UP!

PUBLIC HEARING

Tuesday, May 25, 1993
7 p.m.
Community Center Multi-Purpose Room
25 West Front Street, Butte

The Montana Department of Health and Environmental Sciences will hold a public hearing to discuss the Montana Pole Superfund site preferred remedy and to take formal oral public comments on the Proposed Plan and related documents.

The public is invited to participate in the Superfund remedy selection process.

For more information, contact Site Project Manager Brian Antonioli or Public Information Officer Jane Heath Stiles at MDHES in Helena
1-800-648-8465.

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